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ABSTRACT

This document contains a vocational program guide and Career Merit Achievement Plan (Career MAP) for secondary and postsecondary printing programs. The guide contains the following sections: occupational description; program content (curriculum framework and student performance standards); program implementation (student admission criteria, cooperative education, and student organization participation); instructional resources (student reference materials, service manuals, and periodicals); facility design recommendations and safety, maintenance, and liability considerations; suggested equipment list; and professional development (technical updating and teacher standards with related professional organizations and support services lists). The seven intended outcomes establish students' proficiency in the following: clerical administration support operations; mechanical/creative support operations; prepress operations; offset press operations; finishing/binding operations; employability skills; and entrepreneurship. The Career MAP displays student performance standards and documents the level of achievement on the standards for each of the 13 student outcomes. (NLA)

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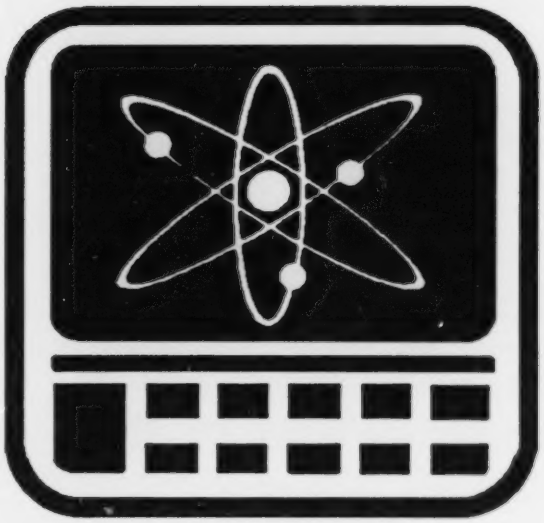

FLORIDA VOCATIONAL PROGRAM GUIDE FOR PRINTING

CE 061 907

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INTRODUCTION

Vocational education meets the needs of students desiring to pursue a selected vocation and is designed to provide training that is realistic in meeting present and future employment opportunities. In recent years, applications of science and technology have expanded rapidly, increasing the education and training required of workers. This has made vocational training programs more attractive as an educational option. The new technologies require well-trained workers to carry out both standardized and specialized procedures, and whose training foundations have given them the capacity to keep pace with continuing technology demands.

The Florida Department of Education shares with business and industry the determination to provide opportunities for upward mobility to as many Floridians as possible. Vocational training programs can keep pace with the demands of new industrial patterns and can provide the opportunity for many of our citizens to gain financial stability and an improved sense of self worth. Therefore, it is necessary to create exemplary vocational programs and to make those programs consistent throughout the state.

This Program Guide identifies primary concerns that should be considered in the organization, operation and evaluation of a vocational education program. It has been developed to provide useful information to local school district and community college administrators, instructors, program advisory committees, regional coordinating councils and others charged with the responsibility of offering vocational education programs.

OCCUPATIONAL DESCRIPTION

A principle occupational title is identified for each vocational training program. This title is validated by the United States Department of Labor Dictionary of Occupational Titles (DOT) or other appropriate references. Such references may be the United States Department of Commerce Standard Occupational Classification Manual (SOC), the Occupational Employment Statistics Survey Dictionary (OES), or Vocational Preparation and Occupations (VPO) prepared by the National and State Occupational Information Coordinating Committees. Information obtained from industry advisory committees may also be used to validate the principle occupational title. The job title and code number for this program are listed in the curriculum framework which accompanies this guide.

The United States Department of Labor Dictionary of Occupational Titles (D.O.T.) identifies the job title for this occupational area as follows:

D.O.T. JOB TITLE	D.O.T. CODE
Offset Press Operator	651.685-018
Bindery Operator	653.685-010
Paste-up/Mechanical Assembler	970.381-018

The definition (description) for this job title is taken from the D.O.T. for easy reference.

OFFSET PRESS OPERATOR.

Tends manually controlled offset press that prints lettering on products, such as dial faces and plastic containers: Rolls machine carriage, equipped with pair of clean and inked cylinders, back and forth over press bed to ink engraved plates or dies and transfer impression to clean cylinder. Positions dial faces or containers in holders in front of engraved plates. Pulls carriage forward so that letters are impressed on clean cylinder and transferred to surface of product. Inspects product for smears, stains, uniform shading and contrast. Places product on tray and places tray into oven to dry printing ink, or places product on conveyor leading to drying oven. Prints flexible containers on press equipped with airhose; forces air into container with hose to produce solid surface for printing. Periodically washes cylinders with solvent. Spreads ink on cleaned cylinder with spatula. May clean smears and spots from rejects with solvent and reprint them. May change ink, rollers and die cut to print more than one color.

BINDER OPERATOR.

Tends one or more machines and performs any combination of following duties involved in binding books, magazines, pamphlets, directories and catalogs: Punches holes in paper sheets, using gang-punch press. Stamps numbers on sheets by hand or machine. Creases and compresses signatures prior to affixing covers, using handpress. Fastens sheets or signatures together, using hand or machine stapler, or tends machine that inserts wire or plastic binding strips into punched holes to fasten pages and covers together. Feeds covers, signatures and sheets into various machines for stitching, folding, ruling, roughing, indexing and gluing operations. Removes, stacks and packs printed material in various stages of completion as it accumulates on delivery table of machines. Examines stitched or bound books and magazines to ascertain that pages or signatures are bound in numerical or folio order according to sample copy and for such defects as imperfect bindings, ink spots and torn, loose and uneven pages. Inserts illustrated pages or extra sheets into catalogs or directories by machine. Places paper jackets on acceptable books. Applies goldleaf, silver leaf or metallic foil on book covers. Stamps designs or lettering on covers, using stamping machine.

PASTE-UP/MECHANICAL ASSEMBLER.

Prepares advertising layout for reproduction according to customer specifications, utilizing knowledge of display techniques: Cuts out and trims photograph, drawing or color sketch in order to create balanced layout and focus consumer attention on advertisement, using cutting tools and stencils. Mounts layout units on backing material and draws lines to indicate position of units, using pen. Draws functional and decorative borders around layout, using marking and measuring instruments. Positions hand-lettered copy on layout. Writes reproduction instructions outside layout border.

PROGRAM CONTENT

The Division of Vocational, Adult, and Community Education, as required by State Board of Education **(S.B.E.) Rule 6A-6.0571**, publishes Vocational Education Program Courses Standards annually. This document specifies the minimum program content for the operation of a vocational training program for the occupational titles listed. Each program identified in the Florida Department of Education Course Code Directory is required to establish course standards. The standards for each vocational offering are comprised of two major components: (1) Curriculum Framework and (2) Student Performance Standards.

Curriculum Framework (CF)

The Curriculum Framework specifies the exact course title, course number, levels of instruction, major course content, laboratory activities, special notes, major course concepts and intended outcomes. The program requirements stipulated in the curriculum framework have been approved by the State Board of Education and are the legal bases for delivery of instruction.

Student Performance Standards (SPS)

The Student Performance Standards are a resource list of job-specific competencies. This list is generated and approved by industry experts and becomes the basis for curriculum development in vocational programs. Local school districts and community colleges must, by law, adopt student performance standards for their vocational programs. They may, at their discretion, adopt the list provided or develop their own as long as there is sufficient content to address each intended outcome. A program may provide instruction beyond the minimum specified in the SPS if desired. The decision to do this should be based on local industry needs. However, the minimum must be presented.

The SPS for secondary level programs contain a third component, course structure. This component specifies the number of courses required for program completion and the content of each course. The courses may be taught in any sequence, but the content may not be changed unless approved by the Division of Vocational, Adult, and Community Education.

The curriculum framework and student performance standards are intended for use as a guide, not a teaching tool. Teachers or curriculum development personnel are expected to develop or select complete curriculum materials for their training programs based on the curriculum framework and student performance standards. Each intended outcome and SPS should be thoroughly analyzed for related cognitive and procedural subskills. The curriculum framework and student performance standards are presented in the following pages.

CURRICULUM FRAMEWORK PROGRAM AREA: Industrial

FLORIDA DEPARTMENT OF EDUCATION EFFECTIVE DATE: July, 1991

PROGRAM TITLE: Printing

CODE NUMBER: Secondary 8739000 Postsecondary _____

Florida CIP 0648.022100

SECONDARY SCHOOL CREDITS 6 COLLEGE CREDITS ____ POSTSECONDARY ADULT VOCATIONAL CREDITS ____

APPLICABLE LEVELS(S): ___ 7-9 ___ 9-12 ___ Postsecondary Adult Vocational

___ Postsecondary Vocational X Other 10-12, 30, 31

CERTIFICATION COVERAGE: PRINTING 7

I. MAJOR CONCEPTS/CONTENT: The purpose of this program is to prepare students for initial employment as paste-up/mechanical assembler (970.381-018), offset press operator (651.685-018), bindery operator (653.685-010). This program also provides supplemental training for persons previously or currently employed in this occupation/these occupations.

The course content will include the following: administrative support operations; pre-press operations; press operations; and finishing operations.

The course content should also include Principles of Work Environment Readiness (P.O.W.E.R.) skills training in communication, leadership, human relations and employability skills; and safe, efficient work practices.

Listed below are the courses that comprise this program when offered at the secondary level:

8739010 Printing 1
8739020 Printing 2
8739030 Printing 3
8739040 Printing 4
8739050 Printing 5
8739060 Printing 6

II. LABORATORY ACTIVITIES: Shop or laboratory activities are an integral part of this program. These activities provide instruction in the use of tools, equipment, materials and processes found in the industry. Students are also instructed in the following: customer layouts, composition and camera-ready copy; producing line negatives, halftone negatives and contacts; stripping line negatives, halftone negatives, and multicolor and process-color negatives; producing single-color proofs and multicolor color proofs; producing printing plates; operating and adjusting duplicators; and operating cutting, folding and binding equipment.

III. SPECIAL NOTE: The Vocational Industrial Clubs of America, Inc., is the vocational student organization which reinforces classroom instruction by providing communications, leadership, human relations and employability training experiences. It also reinforces specific vocational skills. When provided, these activities are considered an integral part of this program.

The cooperative method of instruction may be utilized for this program. When the cooperative method is offered, the following is required for each student: a training plan signed by the student, teacher and employer which includes instructional objectives and a list of on-the-job and in-school learning experiences; and a work station which reflects equipment, skills and tasks relevant to the occupation the student has chosen as a career goal. The student must receive compensation for work performed.

When the cooperative education method of instruction is used, the program length for the secondary program may be increased by a maximum of 2.0 credits.

Other related courses which the student should be encouraged to take while enrolled in this program and which will enhance the student's opportunities in the printing industry include: Journalism, English Literature, Algebra, Chemistry, Physics, Typing, Art, Computer Science and business-related courses.

The typical length of this program for the average achieving student is 900 contact hours (1080 clock hours). It is suggested that 40 percent theoretical training and 60 percent be hands-on laboratory experiences.

The outcomes and student performance standards which the handicapped student must master must be specified in each student's individual education plan (IEP). Additional credits may be earned when outcomes and standards are mastered in accordance with subsequent IEP's. The job title for which the student is being trained must be designated in the IEP.

IV. INTENDED OUTCOMES: After successfully completing this program, the student should be able to:

01. Demonstrate proficiency in performing clerical administrative support operations.
02. Demonstrate proficiency in performing mechanical/creative support operations.
03. Demonstrate proficiency in performing pre-press operations.
04. Demonstrate proficiency in performing offset press operations.
05. Demonstrate proficiency in performing finishing/binding operations.
06. Demonstrate employability skills.
07. Demonstrate an understanding of entrepreneurship.

STUDENT PERFORMANCE STANDARDS EFFECTIVE DATE: July, 1991

PROGRAM AREA: Industrial SECONDARY NUMBER: 8739000

PROGRAM TITLE: Printing POSTSECONDARY NUMBER: _____

01.0 DEMONSTRATE PROFICIENCY IN PERFORMING CLERICAL ADMINISTRATIVE SUPPORT OPERATIONS--The student will be able to:

- 01.01 Establish the sequence of job operations.
- 01.02 Apply basic safety rules.
- 01.03 Use printer's measurements to compute inches and fractions, points and picas, decimals, percentages and proportions.
- 01.04 Use a job information jacket.
- 01.05 Identify characteristics of printing papers to specify basic weights, sizes and grades.
- 01.06 Perform routine maintenance in accordance with manufacturers' specifications and established maintenance schedules.
- 01.07 Comply with established waste and spoilage control measures.

02.0 DEMONSTRATE PROFICIENCY IN PERFORMING MECHANICAL/ CREATIVE SUPPORT OPERATIONS--The student will be able to:

- 02.01 Identify the equipment, tools and materials used in design and copy preparation and the safety rules pertaining to each.
- 02.02 Prepare thumbnail layouts.
- 02.03 Prepare rough layouts.
- 02.04 Prepare comprehensive layouts including a finished working dummy.
- 02.05 Size and proportion photographs, line drawings and other copy elements.
- 02.06 Copyfit and mark up (specific type sizes and styles).
- 02.07 Prepare computer typesetting equipment for operation.
- 02.08 Operate typesetting equipment.
- 02.09 Prepare typesetting processor.
- 02.10 Process typeset copy.
- 02.11 Proofread typeset output.
- 02.12 Paste up mechanical elements including key line for photographs and tint blocks; and ruling.
- 02.13 Prepare tissue overlays and specify color break, tint percentages and reverses.
- 02.14 Check and compare completed mechanicals to comprehensive layouts for final proofing.

03.0 DEMONSTRATE PROFICIENCY IN PERFORMING PRE-PRESS OPERATIONS--The student will be able to:

- 03.01 Identify the equipment and materials used in reproduction photography and the safety rules pertaining to each.
- 03.02 Apply basic principles of photosensitometry, orthochromatic and panchromatic (including use of the gray scale).
- 03.03 Apply basic principles of light pertaining to copy board illumination and exposure calculations for all camera functions.

03.04 Apply basic principles of camera optics pertaining to exposure control and focus and camera extensions pertaining to reductions and enlargements.
03.05 Identify the parts of the process camera and explain their use.
03.06 Apply basic principles of darkroom chemistry.
03.07 Prepare darkroom chemistry.
03.08 Establish basic line exposure at 100 percent using standard time and temperature development.
03.09 Apply basic principles of a Kodak halftone computer and density guide.
03.10 Establish basic exposures to determine screen range, basic flash, main exposure and bump exposure at 100 percent using standard time and temperature development.
03.11 Produce line negatives to size.
03.12 Inspect and compare line negatives to the original mechanical.
03.13 Produce halftones to size.
03.14 Inspect and compare halftones to the original copy.
03.15 Make line and halftone diffusion transfer prints.
03.16 Inspect and compare prints to the original mechanical.
03.17 Apply basic principles of additive and subtractive color pertaining to the use of filters.
03.18 Use filters to hold/delete colors on line shots at 100 percent using standard time and temperature development.
03.19 Identify the parts of a contact frame and light source and explain their use.
03.20 Produce contacts using orthochromatic and duplicating film, transmission density guide and standard time and temperature development.
03.21 Identify equipment and materials used in the stripping function and the safety rules pertaining to each.
03.22 Apply basic principles of stripping using a T-square and triangle.
03.23 Strip one-color, one-up layouts.
03.24 Strip one-color, multiple layouts.
03.25 Strip one-color, step layouts.
03.26 Strip one-color, four-page layouts.
03.27 Strip one-color, eight-page layouts.
03.28 Strip multiple-burn layouts (halftone and screen tints).
03.29 Strip multiple flat-color layouts.
03.30 Inspect and compare flats to the original mechanicals.
03.31 Identify equipment and materials used in proofing and plate-making.
03.32 Produce proofs on diazo or silver paper.
03.33 Process proofs.
03.34 Inspect and compare proofs to the original mechanicals.
03.35 Produce additive or subtractive paper or metal plates.
03.36 Process plates.
03.37 Inspect and compare plates to proofs.
03.38 File, handle and retrieve flats and plates.

04.0 DEMONSTRATE PROFICIENCY IN PERFORMING OFFSET PRESS OPERATIONS--The student will be able to:

04.01 Identify the equipment and materials used in offset press operations, their parts and functions and the safety rules relating to their operation.

04.02 Apply basic principles of offset lithography pertaining to physical and chemical properties of ink components (pigment, vehicle and dryer).
04.03 Apply basic principles of offset lithography pertaining to dampening systems (ducted and continuous).
04.04 Apply basic principles of offset lithography pertaining to fountain solution chemical components (acid, alkaline and neutral).
04.05 Apply basic principles of offset lithography pertaining to pH control and its effects on the lithographic process.
04.06 Apply basic principles of offset lithography pertaining to interrelationships upon the process of paper (coated and uncoated and various grades within).
04.07 Apply basic principles of offset lithography pertaining to the interrelationships of textured or smooth paper; paper, plastic or metal plates; and conventional or compressible blankets.
04.08 Apply basic principles of offset lithography pertaining to ink and its drying properties in relation to fountain solution, plate and paper used.
04.09 Apply basic principles of plate preservation after presswork for long term storage (use of gum arabic and asphaltum).
04.10 Prepare presses for operation by reviewing job-ticket specifications and then selecting appropriate press and materials.
04.11 Prepare presses for operation based on the interrelationships of the lithographic process.
04.12 Mix fountain solution from concentrate.
04.13 Mix ink to PMS (Pantone Matching System) specifications.
04.14 Introduce ink and fountain solution to presses in the proper sequence.
04.15 Setup and adjust feeders to paper specifications (air blast, vacuum and choke).
04.16 Setup and adjust register systems to single sheet or stream fed, side guide and head register.
04.17 Setup and adjust delivery (chute or chain)
04.18 Mount plates (pack if necessary) and adjust to press specifications.
04.19 Mount blankets (pack if necessary) and adjust to press specifications.
04.20 Set impression cylinders to paper thickness and press specifications.
04.21 Set and adjust ink and water rollers pressures to press specifications.
04.22 Make ready presses to assure ink and water balance for uniform coverage, volume and replenishment of ink, image position, cylinder pressure and sheet registration.
04.23 Inspect and evaluate final make ready sheets to job-ticket specifications.
04.24 Set spray powder.
04.25 Produce the required number of press sheets to job-ticket specifications.
04.26 Preserve plates for long term storage.
04.27 Perform press wash-up.
04.28 Perform routine press maintenance to manufacturers' specifications.

05.0 DEMONSTRATE PROFICIENCY IN PERFORMING FINISHING/ BINDING OPERATIONS--The student will be able to:

05.01 Identify the equipment and materials used in finishing/binding operations, their parts and functions and the safety rules relating to their operation.
05.02 Apply basic principles of finishing/binding operations pertaining to pre-press paper cutting, post-press paper cutting and post-bindery cutting (after folding, stitching, etc.).
05.03 Apply basic principles of finishing/binding operations pertaining to sheet cutting.
05.04 Apply basic principles of finishing/binding operations pertaining to grain, caliper and finish (coated or uncoated) of paper.
05.05 Apply basic principles of finishing/binding operations pertaining to signature configurations.
05.06 Apply basic principles of finishing/binding operations pertaining to knife and buckle folding.
05.07 Apply basic principles of finishing/binding operations pertaining to scoring and perforating.
05.08 Apply basic principles of finishing/binding operations pertaining to collating and gathering.
05.09 Apply basic principles of finishing/binding operations pertaining to binding alternatives (saddle, side, perfect, comb, spiral, case, etc.).
05.10 Apply basic principles of finishing/binding operations pertaining to adhesive binding (padding and fan-apart).
05.11 Apply basic principles of finishing/binding operations pertaining to packaging and identification.
05.12 Demonstrate methods of counting sheets (machine, measurement, weight and rapid multiple-sheet manual counting by fives, etc.).
05.13 Hand-jog 8 1/2" x 11" sheets.
05.14 Hand-jog 17" x 22" and larger sheets.
05.15 Machine-jog sheets.
05.16 Prepare rule outs of press sheets for finishing operations according to job-ticket specifications and approved proofs.
05.17 Setup and operate cutters in accordance with rule outs.
05.18 Prepare a folding dummy from press sheets in accordance with job-ticket specifications and approved proofs.
05.19 Setup and operate folders in accordance with job-ticket specifications and the folding dummy.
05.20 Make a single fold.
05.21 Make a multiple parallel fold.
05.22 Make a right angle fold.
05.23 Identify and define slitting, perforating and scoring functions pertaining to folding operations.
05.24 Define collating flat sheets.
05.25 Define gathering of signatures.
05.26 Setup and operate stitchers (side- and saddle-).
05.27 Setup and operate comb binding machines.
05.28 Perform paper padding functions.
05.29 Define perfect, spiral and case binding.
05.30 Setup and operate a paper drill for a standard loose-leaf binder.
05.31 Define die-cutting, embossing, foil-stamping and numbering.
05.32 Package and identify a completed job according to job-ticket specifications.

06.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:

- 06.01 Conduct a job search.
- 06.02 Secure information about a job.
- 06.03 Identify documents that may be required when applying for a job.
- 06.04 Complete a job application form correctly.
- 06.05 Demonstrate competence in job interview techniques.
- 06.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other persons.
- 06.07 Identify acceptable work habits.
- 06.08 Demonstrate knowledge of how to make job changes appropriately.
- 06.09 Demonstrate acceptable employee health habits.
- 06.10 Demonstrate a knowledge of the "Florida Right-to-Know Law" as recorded in Florida Statutes Chapter 442.

07.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:

- 07.01 Define entrepreneurship.
- 07.02 Describe the importance of entrepreneurship to the American economy.
- 07.03 List the advantages and disadvantages of business ownership.
- 07.04 Identify the risks involved in ownership of a business.
- 07.05 Identify the necessary personal characteristics of a successful entrepreneur.
- 07.06 Identify the business skills needed to operate a small business efficiently and effectively.
- 07.07 Demonstrate knowledge of state licensing requirements.

PROGRAM IMPLEMENTATION

It is the teacher's responsibility to ensure that students learn how to competently perform the tasks specified in the course objectives. Therefore, the teacher must lead the students through the learning experiences in a course, motivate students, act as a role model for students, and at times, function as a guidance counselor and placement coordinator. This leadership role requires the teacher to participate in many of the activities required for program implementation. The teacher must select the methods of instruction that best apply to students' ability levels, measure student achievement and provide feedback. Key factors that must be considered when implementing this program are addressed below.

TEACHER CHARACTERISTICS

Subject Knowledge

The teacher must be a subject matter expert who is able to implement sound instructional methods and evaluate student performance. He/she must have significant work experience in the industry/vocational field and be able to communicate that knowledge to the students.

Instructional Delivery

The teacher's role in the learning process is to motivate and lead the student as well as impart subject matter knowledge. In order to maximize student learning, the use of a variety of instructional methods is encouraged. Because teaching styles vary greatly, teachers are highly encouraged to "pick and choose" from various methods or to combine methods for maximum benefit to students. Some of the more traditional methods used are lecture, demonstration and small group instruction. Other teaching methods which are suggested for further exploration include individualized self-paced, open-exit/open-entry, contract, computer based and competency based instruction. The focus of Competency Based Vocational Education (CBVE) is to ensure that each student can competently perform tasks specified before progressing to more complex skills.

CONVENTIONAL INSTRUCTIONAL METHODS

A vocational program may require a portion of the instruction to be presented in a standard lecture or controlled demonstration format. These methods of instruction can be easily combined with instructor controlled step-by-step practical exercises. Some instructional activities may dictate that this instructional approach be used to introduce students to hazardous equipment often utilized in vocational training. In most situations, students should be required to perform specified activities to achieve maximum skill competency. If mastery of a task is required, competency based education methods may be more appropriate. However, if the training activity involves an orientation or a seldom performed, non-essential task, conventional instructional methods may be more effective. Teachers are encouraged to use a variety of instructional methods to best meet instructional objectives.

Instructional Development

Teachers often must develop and select their own teaching and curriculum materials. In developing a comprehensive curriculum, instructional objectives based upon both the performance and cognitive domain must be included. When developing curriculum materials, teachers must use the curriculum framework (CF) and student performance standards (SPS) contained in this program guide as a basis. These materials delineate minimim program content which must be presented for an approved vocational training program. However, they are not intended for use as a comprehensive curriculum. Be certain not to adapt the curriculum to available materials, but select only those materials which can be adapted to the curriculum.

Instructional Measurement

Teachers must select testing methods that support the instructional delivery system used. Teachers must be competent to develop, administer and evaluate written and performance type tests.

Student Admissions Criteria

Providing the student the opportunity to successfully complete a vocational education program, in any institution, should be the primary concern of the instructional effort. Therefore, it is very important to direct planning and effort into identifying and selecting students with excellent potential for success in the educational program and in the occupation. The school's primary task is to prepare people for fulltime, entry-level positions as technicians or, in the case of those with more experience, as managers.

The Course Code Directory, specifies grade levels at which occupational programs are offered. Specific student admissions criteria which are required by the State and local educational agencies for the Printing training program are illustrated as follows.

SPECIFIC ADMISSIONS CRITERIA

Minimum Age:	As required by state and local policy
Physical Requirements:	None
Special Requirements:	None
Minimum Basic Skills Math Level:	* 10.0
Minimum Basic Skills Language Level:	* 9.0

* This grade level requirement is specified in the Curriculum Framework and is applicable to postsecondary level programs of 450 hours or more only. There is no minimum basic skill requirement for secondary programs.

THE STUDENT PROFILE

Developing a student profile is an important step in program implementation. Attention should focus on student characteristics that can be remediated within a training program, but could create serious impediments to success in the vocational field. Typical of these would be deficiencies in communication and mathematical skills. The basic skill levels can be measured by testing. Test results can then be used to direct the student to more suitable training which matches his or her skill level, or to determine supplemental training which may be required to increase chances for student success.

High school and postsecondary vocational students can be admitted to a vocational program upon request if they meet any specified prerequisites, such as physical or basic skill requirements. Training programs should be accessible to as many students as possible. Training programs are designed to prepare students for employment upon graduation, or serve as prerequisite to a postsecondary program.

The community college can be more selective and establish stringent admission standards. This may be done by assessing applicants or by recruiting potential students who meet the established prerequisite requirements of the training. The program advisory committee can design a profile of the potentially successful student. The profile should contain a

list of qualities, traits and aptitudes that will indicate a higher potential for student success. Acceptable levels for these traits must also be determined. For example, the qualities deserving highest attention, mechanical ability and cognitive aptitude, are those which the educational program itself will not likely be able to influence, although these traits should have considerable weight in establishing the basic profile. Deficiencies in mathematical or communication skills may lend themselves to improvement through related instruction while the student is enrolled in the program. The following example illustrates specific qualities to consider when establishing the student profile:

Mechanic/Technician--Service

- Knowledge of basic tools and equipment used by mechanics/technicians
- Ability to analyze and solve mechanical and technical problems
- Ability to interpret written mechanical/technical materials
- Ability to interpret mechanical/technical drawings
- Mechanical dexterity

Mechanic/Technical Service Management

- Basic application of service
- Business skills
- Ability to work with people
- Communication skills
- Leadership

QUALIFYING AND PRETESTING

Assessing potential students for vocational programs is an integral part of the recruiting process since considerable amounts of time and money will be spent on students entering training. Recruiters must have a good idea of the candidate's basic aptitude. Whoever guides the candidate to the program needs to have knowledge of the student's interests, abilities and experience. These can be measured by a variety of assessment methods, which should be performed upon program entry. The assessment can help determine extent and level of training each individual should receive.

The minimim basic skills requirement for mathematics and language skills is specified on the curriculum framework. Assessment should determine the level at which the student can read, write, calculate mathematics and understand the English language. It is appropriate for the program advisory committee and the school to develop some selection criteria based on minimum skill levels. These criteria should remain flexible in order to maximize educational opportunity for all applicants. Additionally, vocational educators must make every effort to serve the variety of "special needs" students and to eliminate sex-bias and stereotyping in all occupational areas.

ADVISORY COMMITTEE

It is imperative that representatives of industry be organized into an advisory committee. Constantly changing technological demands of our society will continue to stimulate changing industrial patterns. Therefore, effective use of program advisory committees is vital to the successful implementation of vocational training programs. Advisory committees provide expert technical advice which is not easily obtainable elsewhere, offer external support of policies and have tremendous public relations potential.

The most effective advisory committees are those whose members have mutual respect for each other's abilities and vested interest in the training program because of their need for trained workers. The program advisory committee is also one of the most effective means of facilitating placement. Its role can be:

- To contact local industry and encourage them to use the school's placement office as a means of filling jobs
- To develop an effective procedure for interviewing and evaluating potential employees suggested by the school
- To assist in gathering accurate and current job information as it becomes available

COUNSELING AND GUIDANCE

Counseling of students serves two purposes. It guides the student into the program and it supports enrolled students on a continuing basis throughout the program. Much day-to-day counseling will be the responsibility of the teacher. The teacher has the most contact with the student and is in a position to detect and correct a problem. Each student will encounter new problems as the program develops. The teacher's job is to work with the student to help identify problems and then strive for solutions. The teacher will provide much of the counseling that focuses on trade knowledge and skills.

The professional counselor cannot be expected to have the subject matter expertise of the primary teacher. The counselor, however, can focus on the student's needs related to other issues such as personal growth, interests and attitudes. The ideal situation will provide at least one counselor with current knowledge of industry standards for career counseling. A useful tool which should be used in the counseling process is the Career Merit Achievement Plan (Career MAP) which presents minimum instructional content keyed to student performance standards. Career MAPs are available for each industrial program area, and can be used to document student achievement, isolate student interests, talents and weaknesses. They are also useful for placement purposes. Information on Career MAPs may be obtained by contacting the Department of Education, Division of Vocational, Adult, and Community Education, (904) 488-0484.

STUDENT PLACEMENT

Implementing an effective placement system is integral to developing a successful vocational training program. **S.B.E. Rule 229.551 (3)(g)** requires 70 percent placement of students who have completed a vocational training program. Although placement is not always a problem, as with students already working in a related occupation, the placement program should place emphasis upon students who are seeking entry-level employment since these students have little or no experience with industry.

The task of the placement program is to locate job openings in the community. The placement coordinator or teacher must know each student's personal aims and interests in addition to the information stated on the achievement record. In many cases, teachers are the best source to match students to job openings because of their contacts with the industry advisory committee. Input concerning employment openings must come from individual business establishments in the community. The placement coordinator should introduce a student to as many suitable job openings as possible. Conversely, employers can then be expected to interview as many qualified candidates as possible.

Cooperative Education

COOPERATIVE EDUCATION APPLICABILITY

Normally, a student will complete the entire program as a full-time student before obtaining employment as a printing specialist. However, there may be situations where a student could be allowed to complete part of the program while employed as a printing specialist. At this time it is appropriate for the student to enroll in industrial cooperative education (ICE). Guidelines for this training plan are provided in the "Industrial Cooperative Education Program Guide," published by the Division of Vocational, Adult, and Community Education, Order # IE 508 BK 87.

Industrial cooperative education is a method of instruction designed to prepare students for jobs in the community. This method is a joint effort between the school and the business community. Student trainees receive a combination of instruction in the classroom and related on-the-job training through employment. Learning experiences are jointly planned and supervised by the teacher and the employer. Cooperative education is relevant to the needs of the student preparing for a work role, and will help the student to achieve success and personal satisfaction as the transition is made from school to the constantly changing world of work.

Cooperative education is defined in the Federal Register, Volume 39, number 143, Vocational Education, Section 102.96, as a program ". . . to prepare students for employment, through: (a) providing meaningful work experiences combined with formal education enabling students to acquire knowledge, skills, and appropriate attitudes, (b) removing the artificial barriers which separate work and education, (c) involving educators with employers, creating interaction whereby the needs and problems of both are made known, thereby making it possible for occupational curricula to be revised to reflect current needs in various occupations . . . ."

PURPOSE

Cooperative Education is for persons who, through written cooperative arrangements between the school and employers, receive instruction, including required academic courses and related instruction by alternation of study in school with a job in any industrial occupational field. These two experiences must be planned and supervised by the school and employers so that each contributes to the student's education and employability. Work periods and school attendance may be on alternative half days, full days, weeks or other periods of time to fulfill objectives of the cooperative education program.

GOALS AND OBJECTIVES

The primary goal of the cooperative method of vocational education is to prepare skilled, responsible individuals who can assume a productive role in the community. Specific objectives to meet the primary goal are:

- To prepare individuals for employment, adjustment and advancement in specified occupations or occupational areas (primary objective)
- To provide an understanding of the contribution of work to the social and economic welfare of our nation
- To provide students with an understanding and appreciation of the American free enterprise system
- To foster an awareness of the civic, social and moral responsibilities of individuals to society

- To stimulate students' interest in their chosen occupational fields and provide an understanding of the opportunities in each field
- To provide training that results in increased efficiency in performing job tasks
- To provide curriculum which is sensitive and adaptable to changes in occupational practices and procedures as they are affected by societal, economic, technical and educational developments
- To strive to develop a greater appreciation of the value of specifically trained personnel among employers, employees and consumers
- To reinforce skills learned in the school laboratory
- To provide experiences on tools and equipment not available in the school laboratory
- To supplement and broaden the school curriculum into areas not otherwise available

Student Organization Participation

Vocational student organizations operate pursuant to federal and state laws, which authorize them as viable components of vocational education programs. According to federal regulations, the vocational education program of instruction may include activities of vocational student organizations which are an integral part of the vocational instruction offered and which are supervised by vocational education personnel. The **S.B.E.** Rules authorize vocational student organizations as an integral part of the vocational education program as stated in **S.B.E. 6A-6.064 (7)** and **6A-6.065 (8).**

VOCATIONAL INDUSTRIAL CLUBS OF AMERICA (VICA)

VICA is an organization for secondary or postsecondary students enrolled in trade and industrial education programs in high schools, area vocational technical centers and junior and community colleges. It is the only national and international organization for trade and industrial students. The organization is designed to expand and enrich opportunities for leadership, social awareness and civic responsibility in vocational students.

Students who participate in VICA activities are often better prepared for the world of work. They acquire knowledge of the many opportunities available in their chosen careers and become aware of the value of their

contributions to society. They are also given opportunities to develop and utilize their talents and abilities in ways that otherwise would not be available to them.

BENEFITS OF VICA MEMBERSHIP FOR THE STUDENT

Membership in VICA offers the student the opportunity for growth and development in the following areas:

School and Community Service Activities Students in VICA become involved in various school and/or community services. These may include clothing or food collections for the needy, donation of time and service to the elderly and participation in fund raisers or similar activities.

Social Interaction with Fellow Students Activities are also available that offer students time for relaxation and fun. Social activities of this type may be held on a regular basis. They might be held on the school campus during school hours, or off campus after school. More formal functions would include end of the year award banquets or industry/employer appreciation dinner banquets.

Competition in Skill and Leadership Contests VICA offers various contests in all the skill and leadership areas it serves. Often, teachers identify talented students who represent their school in regional competitions. However, any student member of VICA may compete. Instructors should conduct planned contests within their trade areas. This also pertains to leadership areas. First and second place regional winners then move on to the state level contest. The state winners then compete at the national level of the United States Skill Olympics.

INSTRUCTIONAL RESOURCES

STUDENT REFERENCE MATERIALS

Necessary instructional texts or pertinent material should be available for each student to satisfy training objectives. When textbooks are used, the copyright date should be as current as possible.

SERVICE MANUALS

Manuals with current manufacturer's service procedures and specifications should be available. These manuals must be located where students can use them while working in the shop area.

PERIODICALS

Current general and technical magazines and newspapers should be available for student and instructor use.

The following list of suggested resources is organized under each outcome shown in the curriculum framework. These resources have been recommended by instructors and program administrators.

01.0 DEMONSTRATE PROFICIENCY IN PERFORMING CLERICAL ADMINISTRATIVE SUPPORT OPERATIONS

TITLE, AUTHOR, ORDER#	PUBLISHER	TYPE
Graphics/Offset Filmstrips 301-309	BERGWALL PRODUCTIONS	film
Comprehensive Graphic Arts E. A. Dennis and J. D. Jenkins	HOWARD W. SAMS AND COMPANY, Division of Macmillan, INC.	text
Graphic Arts Procedures R. Randolph Karch	AMERICAN TECHNICAL PUBLICATIONS, INC.	text
Graphic Communications Richard J. Broekhuizen	McKNIGHT & McKNIGHT PUBLISHING COMPANY	text
Graphic Communications - Workbook Richard J. Broekhuizen	McKNIGHT & McKNIGHT PUBLISHING COMPANY	text
Handbook for Graphic Communications: Art and Copy Preparation, Composition, and Conversion Processes S. B. Lasday	GRAPHIC ARTS TECHNICAL FOUNDATION	text
Photo-Offset Fundamentals John E. Cogoli	BENNETT AND McKNIGHT - GLENCOE PUBLISHING	text
Photo-Offset Fundamentals - Workbook John E. Cogoli	McKNIGHT & McKNIGHT PUBLISHING COMPANY	text
Practical Problems in Mathematics for Graphic Arts LaVonne Vermeersch and Charles Southwick	DELMAR PUBLISHING	text
Printing and Publishing Occupations Department of Labor (DOL)	BUREAU OF LABOR STATISTICS	text

02.0 DEMONSTRATE PROFICIENCY IN PERFORMING MECHANICAL CREATIVE SUPPORT OPERATIONS

TITLE, AUTHOR, ORDER#	PUBLISHER	TYPE
Bergwall-Safety in Printshop	JAEGER CORPORATION	film
Advertising Layout and Art Direction S. Baker	McGRAW HILL BOOK COMPANY	text
Graphic Arts D. E. Carlsen	CHARLES A. BENNETT COMPANY, INC.	text
How to Do Paste-ups and Mechanicals: The Preparation of Art for Reproduction S. R. Maurello	TUDOR PUBLISHING COMPANY	text
Modern Graphic Arts (Paste-Up) Gerald A. Silver	AMERICAN TECHNICAL PUBLICATIONS, INC.	text
Technical Drawing Giesecke, Mitchell, Spencer, Hill	MACMILLAN COMPANY	text

03.0 DEMONSTRATE PROFICIENCY IN PERFORMING PRE-PRESS OPERATIONS

TITLE, AUTHOR, ORDER#	PUBLISHER	TYPE
Even Illumination at the Focal Plane	GRAPHIC ARTS TECHNICAL FOUNDATION	film
Introduction to the Halftone Process Charles Roman	GRAPHIC ARTS TECHNICAL FOUNDATION	film

Introduction to the Process Camera Charles Roman	GRAPHIC ARTS TECHNICAL FOUNDATION	film
Line Copy for the Process Camera Charles Roman	GRAPHIC ARTS TECHNICAL FOUNDATION	film
Making Halftones with the Contact Screen	GRAPHIC ARTS TECHNICAL FOUNDATION	film
Photographic Film Processing-Tray Method Charles Roman	GRAPHIC ARTS TECHNICAL FOUNDATION	film
Process Camera Exposure Determination Charles Roman	GRAPHIC ARTS TECHNICAL FOUNDATION	film
The Process Camera Optical System Charles Roman	GRAPHIC ARTS TECHNICAL FOUNDATION	film
Chemistry of Lithography Paul J. Hartsuch, Ph.D.	GRAPHIC ARTS TECHNICAL FOUNDATION	text
Color Stripping B. R. Halpern	GRAPHIC ARTS TECHNICAL FOUNDATION	text
Copy Preparation for Printing J. F. Cabibi	McGRAW HILL BOOK COMPANY	text
Graphic Arts Photography: Black and White John A. Cogoli	GRAPHIC ARTS TECHNICAL FOUNDATION	text
Graphic Arts Photography: Color Wentzel, Blair, Destree	GRAPHIC ARTS TECHNICAL FOUNDATION	text
Offset Stripping Black and White Barnard R. Halpern	GRAPHIC ARTS TECHNICAL FOUNDATION	text

Stripping: The Assembly of Film Images Harold L. Peck	GRAPHIC ARTS TECHNICAL FOUNDATION	text
The In-Plant Printer Frank A. Bailey	RUTGERS, THE STATE UNIVERSITY, CURRICULUM LABORATORY	text

04.0 DEMONSTRATE PROFICIENCY IN PERFORMING OFFSET PRESS OPERATIONS

TITLE, AUTHOR, ORDER#	PUBLISHER	TYPE
Cylinder Alignment and Adjustments F. S. Benevento	GRAPHIC ARTS TECHNICAL FOUNDATION	film
Cylinder Packing for Changing Image Length F. S. Benevento	GRAPHIC ARTS TECHNICAL FOUNDATION	film
Offset Press Cylinder Packing F. S. Benevento	GRAPHIC ARTS TECHNICAL FOUNDATION	film
Printing Unit Configurations F. S. Benevento	GRAPHIC ARTS TECHNICAL FOUNDATION	film
The Offset Press F. S. Benevento	GRAPHIC ARTS TECHNICAL FOUNDATION	film
The Offset Printing Unit F. S. Benevento	GRAPHIC ARTS TECHNICAL FOUNDATION	film
Understanding and Measuring PH	GRAPHIC ARTS TECHNICAL FOUNDATION	film
Advanced Pressmanship Charles W. Latham	GRAPHIC ARTS TECHNICAL FOUNDATION	text
Instruments and Controls for the Graphic Arts Industry Robert Reed and Douglas Stanton	GRAPHIC ARTS TECHNICAL FOUNDATION	text

Lithographic Offset Press Operating Charles W. Latham	GRAPHIC ARTS TECHNICAL FOUNDATION	text
Lithographic Pressman's Handbook A. Lavi and G. W. Jorgensen	GRAPHIC ARTS TECHNICAL FOUNDATION	text
Solving Offset Ink Problems N. Eldred and D. B. Crouse	GRAPHIC ARTS TECHNICAL FOUNDATION	text
Solving Sheetfed Offset Press Problems Graphic Arts Technical Foundation Staff	GRAPHIC ARTS TECHNICAL FOUNDATION	text
What the Printer Should Know About Ink Terry Scarlett and Nelson R. Eldred	GRAPHIC ARTS TECHNICAL FOUNDATION	text

05.0 DEMONSTRATE PROFICIENCY IN PERFORMING FINISHING/BINDING OPERATIONS

TITLE, AUTHOR, ORDER#	PUBLISHER	TYPE
Presswork and Bindery T. P. Karda	GRAPHIC ARTS TECHNICAL FOUNDATION	film

06.0 DEMONSTRATE EMPLOYABILITY SKILLS

TITLE, AUTHOR, ORDER#	PUBLISHER	TYPE
Applying for a Job - Instructor's Guide (CE 004 BK 81)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	instructor text

Choosing an Occupation - Instructor's Guide (CE 010 BK 84)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	instructor text
Employability Skills Leader's Guide: In-service Workshop (CE 205 BK 85)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	instructor text
Good Work - Instructor's Guide (CE 018 BK 84)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	instructor text
Job Changes - Instructor's Guide (CE 025 BK 84)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	instructor text
Personal Finances - Instructor's Guide (CE 030 BK 84)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	instructor text
Your Job Search - Instructor's Guide (CE 038 BK 84)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	instructor text
Employability Skills Series (ESS) (CE 001 SS 81)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	module
Applying for a Job - Student Guide (CE 003 BK 79)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	student text
Choosing an Occupation - Student Guide (CE 009 BK 84)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	student text

Employability Skills Participant's Guide: In-service Workshop (CE 074 BK 84)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	student text
Good Work - Student Guide (CE 017 BK 84)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	student text
Job Changes - Student Guide (CE 024 BK 84)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	student text
Personal Finances - Student Guide (CE 029 BK 83)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	student text
Your Job Search - Student Guide (CE 037 BK 84)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	student text
A Guide to Employability Skills Materials (CE 042 BK 85)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	text
ESS for Success (CE 150 BK 84)	FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION	text
How to Find the Job You've Always Wanted Burdette and Bostwick	JOHN WILEY & SONS, INC.	text

07.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP

TITLE, AUTHOR, ORDER#	PUBLISHER	TYPE
Business Behind Doors: Decisions	RMI ASSOCIATES	film
Small Business: When Money is the Bottom Line	RMI ASSOCIATES	film
Small Business: When Small is Big	RMI ASSOCIATES	film
Financial Independence	MOTHER EARTH NEWS	text

PUBLISHERS' ADDRESSES

AMERICAN TECHNICAL PUBLICATIONS, INC.
1155 West 175th Street
Homewood, IL 60430
800-323-3471

BENNETT AND McKNIGHT - GLENCOE PUBLISHING
17337 Ventura Boulevard
Encino, CA 91316

BERGWALL PRODUCTIONS
Post Office Box 238
Garden City, NY 11530
800-645-3565

BUREAU OF LABOR STATISTICS
441 G Street Northwest
Washington, DC 20212

CHARLES A. BENNETT COMPANY, INC.
809 West Detweiller Drive
Peoria, IL 61615-2124
309-691-4454

DELMAR PUBLISHING
2 Computer Drive West
Albany, NY 12212
518-459-1150

FLORIDA DEPARTMENT OF EDUCATION, DIVISION OF VOCATIONAL EDUCATION
Knott Building
Tallahassee, FL 32399

GRAPHIC ARTS TECHNICAL FOUNDATION
4615 Forbes Avenue
Pittsburgh, PA 15213

HOWARD W. SAMS AND COMPANY
Division of
MacMillan, INC.
4300 W. 62nd Street
Indianapolis, IN 46268
800-428-7267

JAEGER CORPORATION
135 North Knowles Avenue
Winter Park, FL 32789

JOHN WILEY & SONS, INC.
605 Third Avenue
New York, NY 10158
212-850-6418

MACMILLAN COMPANY
866 Third Avenue
New York, NY 10022
212-702-2000

MOTHER EARTH NEWS
105 Stoney Mountain Road
Hendersonville, NC 28739-2151
415-558-8881

McGRAW HILL BOOK COMPANY
1221 Avenue of the Americas
New York, NY 10020
212-512-2000

McKNIGHT & McKNIGHT PUBLISHING COMPANY
809 West Detweiller
Peoria, IL 61615
800-477-0682

RMI ASSOCIATES
2807 West 47th Street
Shawnee Mission, KS 66205

RUTGERS, THE STATE UNIVERSITY
CURRICULUM LABORATORY
New Brunswick, NJ 08903
201-932-1766

TUDOR PUBLISHING COMPANY
P.O. Box 3443
Greensboro, NC 27402

FACILITIES

Facility Design Recommendations

Facilities, tools and equipment are essential parts of training programs, and must be designed to meet State program standard requirements and instructional objectives. This section of the Program Guide contains information for setting up classroom and laboratory facilities. Facility design criteria and space requirements are specified in **S.B.E. Section B, Chapter 6A-2.**

TEACHING FACILITIES

The instructional environment should duplicate, as closely as possible, the real-life work environment the student will enter after graduation. The more the school resembles the industrial environment, the easier it will be for the student to make the transition from school to work. Tools, supplies and equipment should conform to local industry standards. The teacher should actively pursue supplemental resources to expose the students to state-of-the-art equipment.

All facilities should include classroom space, as well as space for regular classroom equipment such as audio-visual equipment. Laboratory facilities should be equipped with work stations or workbenches, tables, chairs and special training aids to demonstrate basic principles and theory. They should contain enough tools and equipment to enable several students to work individually on the same learning activity.

UPDATING FACILITIES

To keep pace with technological changes and improvements, facilities must be updated on a continuing basis. When planning facilities, priority must be to provide space which will fulfill changing needs of the instructional program. Buildings should be designed with flexibility to expand in order to accommodate future program changes and to allow for greater ease of facility updating. The program advisory committee should be used to assist the school in establishing priorities for obtaining facilities, tools and equipment. Careful planning and analysis of current and future needs will lead to the establishment of an effective training environment.

SCHOOL FACILITIES

Printing

This section of the program guide provides guidelines for printing program facilities. All vocational programs must meet additional facility requirements specified in **S.B.E. Section B, Chapter 6 A-2.**

The classroom/laboratory areas should be designed to accommodate oversized machinery, equipment, materials and holding tables. Each area should be equipped with special lighting, as necessary. The area should provide oversized openings equipped with service entry doors to the movement and transporting of oversized equipment, materials and products.

The laboratory should include electrical outlets providing 110 volts at each work station. Electrical outlets should be permanently mounted to the work station benches. Additional electrical outlets should be installed along the walls and in the center areas of the laboratory. Electrical outlets in the center areas should be mounted on posts between the ceiling and work stations or on pull down extension systems. Special electrical wiring may be required to supply the power requirements of specialized equipment. All electrical service must be installed according to local building code requirements.

CLASSROOM/LABORATORY FACILITIES

Space requirements for **new** facility construction for this program are specified in **S.B.E. Rule 6A-2.032** as shown below.

NEW FACILITIES
PRINTING

Occupant Design Stations	
Net Square Feet Per Occupant	
Minimum	135
Normal	142
Maximum	149
Total Net Square Feet	
Minimum	5400
Normal	5680
Maximum	5960

WORK STATION ARRANGEMENT

The arrangement of work stations and specialized equipment depends upon the general layout of the facilities, but careful consideration must be given to convenience to entrances and exits, easy movement among work stations and tool/storage areas. The area should have a counter convenient to work stations. Overall layout of the facility should be planned so that the location of entrances and exits permits a logical flow of work in progress. One of the most critical factors in planning a facility is the arrangement of work stations to obtain a safe, efficient traffic pattern.

ADDITIONAL FACILITY CONSIDERATIONS

Training Stations

Training stations and live work areas must be available in the type and number required to meet program goals and performance objectives.

Instructional Area

A classroom or designated area of the laboratory should be available for lecture, instruction, viewing audio visual materials and other nonshop activities.

Personal Tool/Equipment Storage Area

A secure storage room or area should be provided, with enough shelf space for student supplies/tool boxes and floor space for equipment.

General Storage

Storage areas for tools, parts, supplies and machines must be sufficient to support the activities outlined in the program goals and performance objectives.

Office Space

An area separate from the classroom and laboratory should be available and convenient for use by the instructor(s) as an office.

Maintenance

A regular facilities maintenance program must be implemented to ensure that equipment and facilities are safe and usable to meet instructional needs.

Housekeeping

The classroom, laboratory and support area(s) must be kept clean and orderly.

Ventilation

A fume/dust removal system should be in place and operable. When appropriate, heating and cooling systems should be used to provide sufficient comfort for learning. Ventilation requirements are stated in **S.B.E. Rule 6A-2.066.**

First Aid

A first aid station must be in place, well marked and complete with appropriate supplies.

Support Facilities

Restrooms, clean-up areas and lockers convenient to the shop should be available for students.

Safety

The facilities must meet all Occupational Safety and Health Administration (OSHA) safety standards, where applicable.

Facility Evaluation

The program advisory committee should be asked to conduct an annual evaluation of the facilities to insure the program's continuing capability to meet instructional objectives.

Safety, Maintenance and Liability

SAFETY

S.B.E. Rule 6A-2.097

The Florida State Board of Education establishes rules for the operation of public schools. **Part III, Section B, Chapter 6A-2** of the State Board of Education Rules contains the standards for existing educational facilities. Subsections deal with the entire school facility in regard to such topics as electrical equipment, flammable materials, ventilation, fire safety, storage and illumination. Subsection 6A-2.097 contains safety regulations pertaining to vocational classes.

The statute requires 100 percent protection of every student and teacher participating in laboratory work wherein the type of activities listed in the statute above are conducted. This will include: demonstration by teachers or students, students and teachers present in a room or laboratory when students are engaged in make-up work or project work, and when anyone is using tools for construction or repair work involving the shaping or cutting of any solid materials.

Rules and regulations for an eye protection program should be organized and distributed to teachers, students and school personnel. Safety devices should be worn by those participating in the activity and by those who are observers or who may be in close proximity.

Marking of Hazardous Areas

Floors, walls, posts, stationary objects, machinery and equipment should be properly painted, marked, coded or identified, according to recommended safety practices of OSHA, the school board and industry.

Emergency Procedure For Injuries

The following procedures are recommended in the event of an injury or sudden illness in a student:

- Refer to the red "fire or medical emergency" signs posted in appropriate areas.
- Provide immediate first aid if so qualified.
- Notify appropriate personnel to advise them of the problem. They can also contact emergency trained personnel on campus.
- A conscious person has the right to refuse treatment and/or transportation to a medical facility.
- Advise students that they will be financially responsible for ambulance and emergency care.
- The paramedics will assume patient care upon arrival.
- If emergency transportation is not indicated, the student may spend time at the clinic, be allowed to go home or go to a medical facility.
- Be sure to complete the appropriate student injury form for any and all accidents or sudden illness.

MAINTENANCE

Schools should have the necessary facilities for routine maintenance. Special maintenance requirements for this program concern the hand and power tools and machines. Arrangements must be made to accomplish routine and non-routine maintenance of hand and power tools and cutting and shaping machines. Arrangements can be made through the school's shop or an outside agency.

VOCATIONAL TEACHER LIABILITY

Liability of Teacher and School Board

Negligence of vocational education teachers can cause unnecessary injury, and may result in teacher and school district liability. Vocational teachers are recommended to carry personal liability insurance. To reduce the risk of liability and injuries, the following suggestions are provided.

- Follow accepted policies of the school board.
- Do not allow students to use equipment or tools which have not been approved by the administration and Board of Education.
- Establish safety rules and enforce them.
- Do not leave the shop/laboratory while students are working.
- Do not permit non-enrolled students to use the shop/laboratory.
- Do not allow students to use machines or tools for which instruction has not been given.
- Do not approve unsupervised student activities inside or outside the shop/laboratory.
- Prepare accident forms for all accidents.
- Regularly inspect the workplace and equipment for defects or potential hazards and maintain documentation of unserviceable or hazardous items.
- Consider age, maturity, skill and ability of students when providing instruction and supervision.
- Administer safety tests to students upon completion of the demonstration of a specific machine, tool or process and keep documentation on file in your office.
- Require all students to wear eye protection devices, when appropriate, for laboratory activities.

SUGGESTED EQUIPMENT LIST

General Classroom Equipment

DESCRIPTION

Chalkboard

Bulletin board

Bookcases

Cabinet-storage

Student study stations

Audio-visual equipment as needed

Laboratory Tools and Equipment

These tools and items of equipment are normally used in this program. Equipment items are listed under each outcome, corresponding to the curriculum framework. Consumable supplies should be readily available to assure continuous instruction. Consumable supplies such as solder and wire are not contained in the equipment list.

01.0 DEMONSTRATE PROFICIENCY IN PERFORMING CLERICAL ADMINISTRATIVE SUPPORT OPERATIONS

DESCRIPTION

Bookcase
Cabinet, flat storage, 25 drawer
Calculator
Desk, office
Desk, typing
Desks or table and chairs, student
File cabinet, legal
File cabinet, standard

Panto matching system (PMS) ink color book
Paper gage
Paper swatch books from local paper houses
Printer's line gage
Printer's rule
Proportional wheel
Thermograph machine, raised printing
Typewriter
Work bench

02.0 DEMONSTRATE PROFICIENCY IN PERFORMING MECHANICAL CREATIVE SUPPORT OPERATIONS

DESCRIPTION

Assortment of digitized fonts (supplied by phototypesetting manufacturer)
Computer typesetting and laser printer
Copyfitting chart (supplied by phototypesetting manufacturer)
Drafting machine
Graphic Arts Technical Foundation color communicator
Light table
Mechanical inking pens
Processor, phototypesetting
Proportional scale
Punch and register pins
Rules, straightedge
Ruling pens
Shelving to accommodate materials
Stool(s) for light table(s)
T-square
Table, drafting, four post
Triangles, 30, 45 and 60 degree
Wax coater, table model

03.0 DEMONSTRATE PROFICIENCY IN PERFORMING PRE-PRESS OPERATIONS

DESCRIPTION

Cabinet, film
Camera, process
Chemical stainless steel trays
Diffusion transfer processor
Film dryer
Filters and holder

Flash lamp (halftone)
Frame, contact printing
Kodak Q-15 halftone calculator
Kodak Q-16 reflection density guide
Kodak negative halftone contact screen, 133 line
Kodak negative halftone contact screen, 85 line
Light source (point light) for contact printing
Light-trap door for dark room
Magnifying glass
Master sets of 85 line and 133 line screen tints 10" x 12" and 20" x 24"
Measuring beakers
Photomechanical transfer (PMT) processor
Plate maker, flip top
Plate processing table
Plate storage cabinet
Red lights
Reflecting gray scale
Reflection and transmission densitometer
Register system (punch, pin strips, pins, etc.)
Set of tint screens
Sink unit developing and washer with temperature control
Sink, plate developing
Table, plate finishing
Timer
Trimming board to cut film
Yellow flash lamp, filter and timer

04.0 DEMONSTRATE PROFICIENCY IN PERFORMING OFFSET PRESS OPERATIONS

DESCRIPTION

Electric portable stapler
Eye wash safety station
Ink knife
Ink mixing scale and Panto matching system (PMS) color book
Ink scale
Metal cabinet for flammables
Meter, pH
Micrometer, blanket or standard
Offset printing presses
Photo direct platemaker/camera
Plate processor, photo-direct
Powder spray unit
Press table in front of each press
Press wipe disposal container
Rack, drying
Solvent bottles

Solvent splash can
Solvent storage can, 5 gal.
Storage can for solvent rags, flammable
Wash up attachment for press
Work carts

05.0 DEMONSTRATE PROFICIENCY IN PERFORMING FINISHING/BINDING OPERATIONS

DESCRIPTION

Bindery stool(s)
Binding machine
Collator, 30 bin automatic
Cutter, paper, power
Dispenser, tape
Drill, paper, power
Folder, paper, power, with right angle attachment
Folder, table top, friction
Jogger, paper, power
Pad counter
Padding press
Press table
Punch and binder, hand operated
Punch, universal hole drill
Shrink wrap with heat tunnel
Stitcher, wire, power, floor model, with saddle attachment
Truck, bindery, portable
Truck, stock, portable

06.0 DEMONSTRATE EMPLOYABILITY SKILLS

DESCRIPTION

NONE

07.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP

DESCRIPTION

NONE

PROFESSIONAL DEVELOPMENT

Teacher Technical Updating

Technical updating workshops are scheduled periodically throughout the State, usually in the summer months. Teachers should take advantage of the opportunity to attend the Printing program technical update workshops when they are held. All instructional staff are encouraged to participate in as many training opportunities as possible.

Teachers should seek opportunities with local companies to maintain currency with industry trends. During periods when school is not in session, teachers are encouraged to make arrangements to return to industry for suitable involvement in their area of expertise.

Membership in professional associations offers vocational educators an enormous range of opportunities for working together to strengthen the field and to develop personal competence and satisfaction in work. The associations have similar goals and activities. They seek excellence in program content by means of joint efforts among members, communications that keep members current, forums for the discussion of issues in the field, useful and stimulating publications and sound professional growth experiences at local, state, regional and national meetings and annual conventions. They are concerned with increasing public understanding and support of the field. Teachers are encouraged to maintain affiliation with professional organizations. A list of professional organizations follows this section of the guide.

Teacher Standards

As a prerequisite to certification, teachers must have the required years of experience in the appropriate technical field as defined in the certification standards. For the Printing program, the requirements are six years continuous experience in printing. The teacher is then judged qualified to teach upon meeting one of the following criteria: (1) regular or temporary Florida teacher's certificate with appropriate coverage, (2) Approval of local school board consistent with adopted school policy or (3) regular or temporary Florida teacher's certificate with other than appropriate coverage (has met all occupational experience requirements prescribed as a prerequisite to appropriate certification and has been approved by the school board to teach

out-of-field). Refer to the Curriculum Framework for this program to determine the appropriate occupational specialization coverage required for certification.

Instructional staff must have technical competency and meet all State and local requirements for certification. Instructors should hold current, nationally recognized certification in the subject areas taught, if awarded. Beginning teachers must be enrolled in the State Beginning Teacher Program.

A systematic method of obtaining "substitute" instructors, approved by the school board, should be used to assure instructional continuity. An orientation session for substitutes should be held on a regular basis. The substitute should be a competent instructor in the occupational area and specific competencies taught.

Professional Organizations and Support Services

EDUCATION ORGANIZATIONS

AMERICAN VOCATIONAL ASSOCIATION (AVA)
1410 King Street
Alexandria, VA 22314
800-826-9972

FLORIDA ASSOCIATION FOR TRADE AND INDUSTRIAL EDUCATION, INC. (FATIE)
Florida Department of Education
Industrial Education - Vocational Division
Knott Building
Tallahassee, FL 32399
904-488-0484

FLORIDA VOCATIONAL ASSOCIATION (FVA)
1420 North Paul Russell Road
Tallahassee, FL 32399
904-878-6860

FLORIDA VOCATIONAL INDUSTRIAL CLUBS OF AMERICA (VICA)
Florida Department of Education
Knott Building
Tallahassee, FL 32399
904-488-0484

TRADE ORGANIZATIONS

This list contains trade associations and technical societies. Many offer training programs of some sort, either directly or through their member companies. Specific details should be requested in writing.

PRINTING INDUSTRIES OF FLORIDA
4205 Edgewater Drive
Orlando, FL 32804
305 290-5801 or 800/331-0461

AMERICAN INSTITUTE OF GRAPHIC ARTS (AIGA)
1059 Third Avenue
New York, NY 10021
212-752-0813

AMERICAN QUICK PRINTING ASSOCIATION (AQPA)
c/o Printing Industries of the Gulf Coast Inc.
1324 North Clay St.
Houston, TX 77019
713-522-2046

ART AND CRAFT MATERIALS INSTITUTE (ACMI)
715 Boylston St.
Boston, MA 02116
617-266-6800

ASSOCIATION OF GRAPHIC ARTS CONSULTANTS
1730 North Lynn St.
Arlington, VA 22209
703-841-8140

ASSOCIATION OF COLLEGE AND UNIVERSITY PRINTERS (ACUP)
c/o James Gill
Howard University Printing Office
219 Western Avenue
Allston, MA 02134
617-495-2175

ASSOCIATION OF REPRODUCTION MATERIALS MANUFACTURERS (ARMM)
901 North Washington St.
Suite 509
Alexandria, VA 22314
703-548-7500

COUNCIL OF REPROGRAPHICS EXECUTIVES (CORE)
c/o Martin Goland
Southwest Research Institute
Post Office Box 28510
San Antonio, TX 78284
512-684-5111

FLEXOGRAPHIC TECHNICAL ASSOCIATION (FTA)
906 Marconi Avenue
Ronkonkoma, NY 11779
516-737-6020

GRAPHIC ARTS EMPLOYERS OF AMERICA (GAE)
1730 North Lynn St.
Arlington, VA 22209
703-841-8150

GRAPHIC ARTS EQUIPMENT AND SUPPLY DEALERS ASSOCIATION (GAESDA)
1730 North Lynn St.
Arlington, VA 22209
703-841-8169

GRAPHIC ARTS MARKETING INFORMATION SERVICE (GAMIS)
1730 North Lynn St.
Arlington, VA 22209
703-841-8179

GRAPHIC ARTS TECHNICAL FOUNDATION (GATF)
4615 Forbes Avenue
Pittsburgh, PA 15213
412-621-6941

GRAPHIC COMMUNICATIONS ASSOCIATION (GCA)
1730 North Lynn St.
Arlington, VA 22209
703-841-8160

GRAPHICS PREPARATORY ASSOCIATION (GPA)
merged with INTERNATIONAL PREPRESS ASSOCIATION January 1, 1988)
7200 France Avenue South
Suite 327
Edina, MN 55435
612-896-1908

GRAVURE ASSOCIATION OF AMERICA (GAA)
90 5th Avenue 4th Floor
New York, NY 10011
212-255-0070

INDEPENDENT SIGNCRAFTERS OF AMERICA (ISA)
Post Office Box 605
Marietta, OH 45750
614-374-3276

MASTER PRINTERS OF AMERICA
1730 North Lynn Street
Arlington, VA 22209
703-841-8130

BINDING INDUSTRIES OF AMERICA, INC. (BIA)
70 East Lake Street
Chicago, IL 60601
312-372-7606

GRAPHIC ARTS EQUIPMENT AND SUPPLY DEALERS ASSOCIATION (GAESDA)
1730 North Lynn Street
Arlington, VA 22209
703-841-8170

NATIONAL COMPOSITION ASSOCIATION (NCA)
1730 North Lynn Street
Arlington, VA 22209
703-841-8165

NATIONAL ASSOCIATION OF LITHOGRAPHIC PLATEMAKERS (NALPM)
1730 North Lynn Street
Arlington, VA 22209
703-841-8127

ASSOCIATION OF COLLEGE AND UNIVERSITY PRINTERS (ACUP)
University of Maryland
Building 005
College Park, MD 20742
301-454-3630

ASSOCIATION OF THE GRAPHIC ARTS (AGA)
5 Penn Plaza
New York, NY 10001
212-279-2100

COMPUTER-AIDED PUBLISHING
90 West Montgomery Avenue
Suite 200
Rockville, MD 20850
301-294-8710

GRAPHIC ARTS ASSOCIATION (GAA)
1900 Cherry Street
Philadelphia, PA 19103
215-299-3300

GRAPHIC ARTS INDUSTRIES ASSOCIATION
78 Albert Street Suite 906
Ottawa, Ontario
K1P 5E7 Canada
613-236-7208

INTERNATIONAL ASSOCIATION OF PRINTING HOUSE CRAFTSMEN (IAPHC)
7599 Kenwood Road
Cincinnati, OH 45236
513-891-0611

INTERNATIONAL PREPRESS ASSOCIATION
7200 France Avenue South
Suite 327
Edina, MN 55435
612-896 1908

NATIONAL ASSOCIATION OF PRINTERS AND LITHOGRAPHERS (NAPL)
780 Palisade Avenue
Teaneck, NJ 07666
201-342-0700

NATIONAL ASSOCIATION OF QUICK PRINTERS (NAQP)
4111 East Wacker Drive
Chicago, Il 60601
312-644-6610

NATIONAL COMPOSITION ASSOCIATION (NCA)
1730 North Lynn Street
Arlington, VA 22209
703-841-8165

NATIONAL COMPUTER GRAPHICS ASSOCIATION (NCGA)
2722 Merrilee Drive
Suite 200
Fairfax, VA 22031
703-698-9600

PRINTING INDUSTRIES OF AMERICA (PIA)
1730 North Lynn Street
Arlington, VA 22209
703-841-8100

PRINTING INDUSTRY OF SOUTH FLORIDA
Post Office Box 4550
Hialeah, FL 33014
305-558-4855

TECHNICAL ASSOCIATION OF THE GRAPHIC ARTS (TAGA)
RIT T&E Center
Post Office Box 9887
Rochester, NY 14623
716-272-0557

TYPOGRAPHERS INTERNATIONAL ASSOCIATION (TIA)
2266 Hall Place, Northwest
Washington, DC 20007
202-965-3400

State of Florida
Department of Education
Tallahassee, Florida
Betty Castor, Commissioner
Affirmative action/equal opportunity employer

IE568 BK-91

CAREER MERIT ACHIEVEMENT PLAN (CAREER MAP)

PRINTING

(0648.022100)

STUDENT'S NAME

State of Florida

An affirmative action/equal opportunity employer

DEPARTMENT OF EDUCATION
Betty Castor, Commissioner of Education

DIVISION OF VOCATIONAL, ADULT AND COMMUNITY EDUCATION
Robert S. Howell, Director

DEVELOPED BY:
University of South Florida
Department of Adult and Vocational Education

INDUSTRY-BASED PARTNERSHIP PROGRAMS: The State of Florida is committed to the development of industry-based partnership programs, designed by education and industry to respond to industry's demand for a highly skilled work force.

ACKNOWLEDGEMENTS

The curriculum for the Printing program was developed by the Florida Department of Education with assistance from representatives from industry and vocational education instructors.

For further information, contact
Bureau of Vocational Program and Staff Development
Division of Vocational, Adult, and Community Education
Department of Education
Knott Building
Tallahassee, FL 32399

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THIS MERIT ACHIEVEMENT PLAN RECORDS THE PRINTING ACHIEVEMENTS OF:

Student's Name _____

Student ID Number _____

Student's Address _____

_____

Initial Instructor _____

School _____

Date Started _____

PRIMARY JOB TITLE(S) FOR PRINTING

- Offset Lithographic Press Setters OES#(92512786)
- Paste-up/Mechanical Assembler DOT#(970.381-018)
- Offset Press Operator DOT#(651.685-018)
- Bindery Operator DOT#(653.685-010)

Program completers qualify for the primary job title(s) listed above. Related job titles may be added based on those job titles found in industry and/or the Dictionary of Occupational Titles.

OVERVIEW

This Career MAP includes the competencies required for entry into the field of printing. Business and industry representatives have recommended that students in this field master these competencies in order to become employable. Local education agencies (LEAs) may adapt these competencies to meet their workforce needs.

PURPOSE OF THE MAP

The purposes of the MAP are: to display the student performance standards (SPS) required by the LEA and to document the level of achievement on student performance standards that the student demonstrates.

HOW TO USE THE MAP

Administrator and Instructor. The administrator and instructor can use Career MAPs in curriculum planning, program updating and improvement and teacher recruitment, selection and updating. If the LEA changes or adds student performance standards, the revised or additional student performance standards should be included in the blank boxes that appear within each intended outcome or at the end of this MAP.

Instructor. The instructor can use Career MAPs to keep track of student progress on student performance standards. By periodically reviewing the ratings on student performance standards, the instructor can identify a student's strengths and weaknesses and, on that basis, identify the skills for which the student needs remedial instruction or advanced training. The MAP can also be useful in student counseling and evaluation.

Co-op Instructor/Employer. The employer who sponsors a co-op program should use the Career MAP for keeping a record of the student's performance on appropriate standards. The MAPs will also help the co-op instructor/employer in counseling and evaluating the student.

Student. The student may use the MAP to show potential employers the performance standards he or she has mastered. In order to present a complete record, the student should encourage the instructor/co-op employer to rate his or her level of achievement on all the appropriate student performance standards and to fill in the verification form/cooperative work experience page in the back of this MAP.

Employer. The MAP shows an employer the student performance standards mastered by the student (a prospective employee) and the proficiency level achieved on each student performance standard. This information can help the employer make decisions about hiring, job assignments and job-training needs.

RATING STUDENT PERFORMANCE STANDARDS

Performance Competencies. Ratings on student performance standards should be based upon business/industrial performance standards. The evaluator observes and evaluates student performance as he or she would in the role of the employer or supervisor.

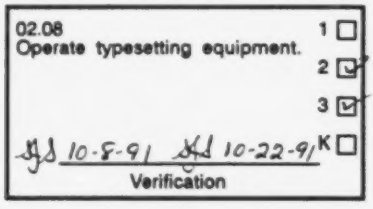
For each skill listed the learner receives a rating of 1, 2 or 3. Each rating indicates a particular level of achievement:

1 = Learner demonstrates knowledge and understanding of this student performance standard, but is not yet able to apply that knowledge or understanding.

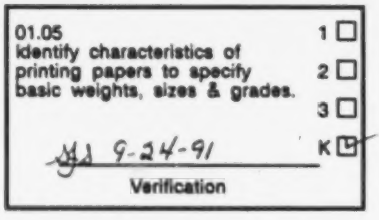
2 = Learner performs this student performance standard satisfactorily with only periodic supervision.

3 = Learner performs this student performance standard satisfactorily without supervision.

Whenever a performance standard is demonstrated, the instructor checks the appropriate rating box (1, 2 or 3) and initials and dates the verification line. If the student later demonstrates a higher level of achievement on a performance competency, the instructor checks the higher level and then enters his or her initials and the new date on the verification line, as shown in the following example:



Knowledge Competencies. For each SPS that is a knowledge competency only, with no manipulative skill involved, only one level of achievement is possible. If the student masters the competency, he or she receives a check in the bottom box ("K"), as shown below:



NOTE: A student performance standard without a checked rating indicates that the learner has not mastered the standard from lack of either ability, time, opportunity or need (the student's area of specialization may not have required it).

01.0 DEMONSTRATE PROFICIENCY IN PERFORMING CLERICAL ADMINISTRATIVE SUPPORT OPERATIONS.

01.01 Establish the sequence of job operations. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.02 Apply basic safety rules. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.03 Use printer's measurements to compute inches & fractions, points & picas, decimals, percentages & proportions. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
01.04 Use a job information jacket. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.05 Identify characteristics of printing papers to specify basic weights, sizes & grades. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	01.06 Perform routine maintenance in accordance with manufacturer specifications & established maintenance schedules. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
01.07 Comply with established waste & spoilage control measures. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

02.0 DEMONSTRATE PROFICIENCY IN PERFORMING MECHANICAL/CREATIVE SUPPORT OPERATIONS.

02.01 Identify the equipment, tools & materials used in design & copy preparation & the safety rules pertaining to each. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.02 Prepare thumbnail layouts. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.03 Prepare rough layouts. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
02.04 Prepare comprehensive layouts including a finished working dummy. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.05 Size & proportion photographs, line drawings & other copy elements. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	02.06 Copyfit & mark up (specific type sizes & styles). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

02.07 Prepare computer typesetting equipment for operation. 1 2 3 K Verification	02.08 Operate typesetting equipment. 1 2 3 K Verification	02.09 Prepare typesetting processor. 1 2 3 K Verification
02.10 Process typeset copy. 1 2 3 K Verification	02.11 Proofread typeset output. 1 2 3 K Verification	02.12 Paste up mechanical elements including key line for photographs & tint blocks; & ruling. 1 2 3 K Verification
02.13 Prepare tissue overlays & specify color break, tint percentages & reverses. 1 2 3 K Verification	02.14 Check & compare completed mechanicals to comprehensive layouts for final proofing. 1 2 3 K Verification	1 2 3 K Verification
1 2 3 K Verification	1 2 3 K Verification	1 2 3 K Verification

03.0 DEMONSTRATE PROFICIENCY IN PERFORMING PRE-PRESS OPERATIONS.

03.01 Identify the equipment & materials used in reproduction photography & the safety rules pertaining to each. 1 2 3 K Verification	03.02 Apply basic principles of photosensitometry, orthochromatic & panchromatic (including use of the gray scale). 1 2 3 K Verification	03.03 Apply basic principles of light pertaining to copy board illumination & exposure calculations for all camera functions. 1 2 3 K Verification
03.04 Apply basic principles of camera optics pertaining to exposure control & focus & camera extensions pertaining to reductions & enlargements. 1 2 3 K Verification	03.05 Identify the parts of the process camera & explain their use. 1 2 3 K Verification	03.06 Apply basic principles of darkroom chemistry. 1 2 3 K Verification
03.07 Prepare darkroom chemistry. 1 2 3 K Verification	03.08 Establish basic line exposure & exposure time at 100 percent using standard time & temperature development. 1 2 3 K Verification	03.09 Apply basic principles of a Kodak halftone computer & density guide. 1 2 3 K Verification

03.10 Establish basic exposures to determine screen range, basic flash, main exposure & bump exposure at 100 percent using standard time & temperature development. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.11 Produce line negatives to size. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.12 Inspect & compare line negatives to the original mechanical. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.13 Produce halftones to size. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.14 Inspect & compare halftones to the original copy. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.15 Make line & halftone diffusion transfer prints. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.16 Inspect & compare prints to the original mechanical. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.17 Apply basic principles of addition & subtraction color pertaining to the use of filters. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.18 Use filters to hold/delete colors on line shots at 100 percent using standard time & temperature development. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.19 Identify the parts of a contact frame & light source & explain their use. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.20 Produce contacts using orthochromatic & duplicating film, transmission density guide & standard time & temperature development. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.21 Identify equipment & materials used in the stripping function & the safety rules pertaining to each. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.22 Apply basic principles of stripping using a T-square & triangle. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.23 Strip 1-color, 1-up layouts. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.24 Strip 1-color, multiple layouts. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.25 Strip 1-color, step layouts. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.26 Strip 1-color, 4-page layouts. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.27 Strip 1-color, 8-page layouts. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.28 Strip multiple burn layouts (halftone & screen tints). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.29 Strip multiple flat color layouts. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.30 Inspect & compare flats to the original mechanicals. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
03.31 Identify equipment & materials used in proofing & platemaking to obtain proper exposures using a transmission density guide for processing photo-sensitive paper or metal plates. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.32 Produce proofs on diazo or silver paper. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	03.33 Process proofs. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

PRINTING

03.34 Inspect & evaluate proofs to the original mechanicals. 1 2 3 K Verification	03.35 Produce additive or subtractive paper or metal plates. 1 2 3 K Verification	03.36 Process plates. 1 2 3 K Verification
03.37 Inspect & compare plates to proofs. 1 2 3 K Verification	03.38 File, handle & retrieve flats & plates. 1 2 3 K Verification	1 2 3 K Verification
1 2 3 K Verification	1 2 3 K Verification	1 2 3 K Verification

04.0 DEMONSTRATE PROFICIENCY IN PERFORMING OFFSET PRESS OPERATIONS.

04.01 Identify the equipment & materials used in offset press operations, their parts & functions & the safety rules relating to their operation. 1 2 3 K Verification	04.02 Apply basic principles of offset lithography pertaining to physical & chemical properties of ink components (pigment, vehicle & dryer). 1 2 3 K Verification	04.03 Apply basic principles of offset lithography pertaining to dampening systems (ducted & continuous). 1 2 3 K Verification
04.04 Apply basic principles of offset lithography pertaining to fountain solutions' chemical components (acid, alkaline & neutral). 1 2 3 K Verification	04.05 Apply basic principles of offset lithography pertaining to pH control & its effects on the lithographic process. 1 2 3 K Verification	04.06 Apply basic principles of offset lithography pertaining to interrelationships upon the process of paper coated & uncoated & various grades within. 1 2 3 K Verification
04.07 Apply basic principles of offset lithography pertaining to the interrelationships of textured or smooth paper; paper, plastic or metal plates; & conventional or compressible blankets. 1 2 3 K Verification	04.08 Apply basic principles of offset lithography pertaining to ink & its drying properties in relation to fountain solution, plate & paper used. 1 2 3 K Verification	04.09 Apply basic principles of plate preservation after presswork for long term storage (use of gum arabic & asphaltum). 1 2 3 K Verification
04.10 Prepare presses for operation by reviewing job-ticket specifications & then selecting appropriate press & materials. 1 2 3 K Verification	04.11 Prepare presses for operation based on the interrelationships of the lithographic process. 1 2 3 K Verification	04.12 Mix fountain solution from concentrate. 1 2 3 K Verification

04.13 Mix ink to PMS (Pantone Matching System) specifications. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.14 Introduce ink & fountain solution to presses in the proper sequence. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.15 Set up & adjust feeders to paper specifications (air blast, vacuum & choke). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
04.16 Set up & adjust register systems to single sheet or stream fed, side guide & head register. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.17 Set up & adjust delivery (chute or chain). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.18 Mount plates (pack if necessary) & adjust to press specifications. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
04.19 Mount blankets (pack if necessary) & adjust to press specifications. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.20 Set impression cylinders to paper thickness & press specifications. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.21 Set & adjust ink & water rollers pressures to press specifications. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
04.22 Make ready presses to assure ink & water balance for uniform coverage, volume & replenishment of ink, image position, cylinder pressure & sheet registration. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.23 Inspect & evaluate final make-ready sheets to job-ticket specifications & obtain proof approval to run. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.24 Set spray powder. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
04.25 Produce the required number of press sheets to job-ticket specifications. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.26 Preserve plates for long term storage. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	04.27 Perform press wash-up. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
04.28 Perform routine press maintenance to manufacturer's specifications. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

05.0 DEMONSTRATE PROFICIENCY IN PERFORMING FINISHING/BINDING OPERATIONS.

05.01 Identify the equipment & materials used in finishing/binding operations, their parts & functions & the safety rules relating to their operation. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.02 Apply basic principles of finishing/binding operations pertaining to prepress paper cutting, postpress paper cutting & postbindery cutting. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.03 Apply basic principles of finishing/binding operations pertaining to sheet cutting. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

05.04 Apply basic principles of finishing/binding operations pertaining to grain, caliper & finish (coated or uncoated) of paper. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.05 Apply basic principles of finishing/binding operations pertaining to signature configurations. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.06 Apply basic principles of finishing/binding operations pertaining to knife & buckle folding. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.07 Apply basic principles of finishing/binding operations pertaining to scoring & perforating. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.08 Apply basic principles of finishing/binding operations pertaining to collating & gathering. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.09 Apply basic principles of finishing/binding operations pertaining to binding alternatives (saddle, side, perfect, comb, spiral, case, etc.). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.10 Apply basic principles of finishing/binding operations pertaining to adhesive binding (padding & fan-apart). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.11 Apply basic principles of finishing/binding operations pertaining to packaging & identification. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.12 Demonstrate methods of counting sheets (machine, measurement, weight & rapid multiple-sheet manual counting by fives, etc.). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.13 Hand-jog 8 1/2" x 11" sheets. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.14 Hand-jog 17" x 22" & larger sheets. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.15 Machine-jog sheets. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.16 Prepare rule outs of press sheets for finishing operations according to job-ticket specifications & approved proofs. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.17 Set up & operate cutters in accordance with rule outs. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.18 Prepare a folding dummy from press sheets in accordance with job-ticket specifications & approved proofs. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.19 Set up & operate folders in accordance with job-ticket specifications & the folding dummy. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.20 Make a single fold. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.21 Make a multiple parallel fold. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.22 Make a right angle fold. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.23 Identify & define slitting, perforating & scoring functions pertaining to folding operations. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.24 Define collating flat sheets. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.25 Set up & operate stitchers (side- & saddle-). 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.26 Set up & operate comb binding machines. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.27 Perform paper padding functions. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification

PRINTING

05.28 Define perfect, spiral & case binding. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.29 Set up & operate a paper drill for a standard loose-leaf binder. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	05.30 Define die-cutting, embossing, foilstamping & numbering. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification
05.31 Package & identify a completed job according to job-ticket specifications. 1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

0.0 DEMONSTRATE EMPLOYABILITY SKILLS.

0.01 Conduct a job search. 1 2 3 K Verification	0.02 Secure information about a job. 1 2 3 K Verification	0.03 Identify documents that may be required when applying for a job. 1 2 3 K Verification
0.04 Complete a job application form correctly. 1 2 3 K Verification	0.05 Demonstrate competence in job interview techniques. 1 2 3 K Verification	0.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other persons. 1 2 3 K Verification
0.07 Identify acceptable work habits. 1 2 3 K Verification	0.08 Demonstrate knowledge of how to make job changes appropriately. 1 2 3 K Verification	0.09 Demonstrate acceptable employee health habits. 1 2 3 K Verification

00.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP.

00.01 Define entrepreneurship. 1 2 3 K Verification	00.02 Describe the importance of entrepreneurship to the American economy. 1 2 3 K Verification	00.03 List the advantages & disadvantages of business ownership. 1 2 3 K Verification
00.04 Identify the risks involved in ownership of a business. 1 2 3 K Verification	00.05 Identify the necessary personal characteristics of a successful entrepreneur. 1 2 3 K Verification	00.06 Identify the business skills needed to operate a small business efficiently & effectively. 1 2 3 K Verification
1 2 3 K Verification	1 2 3 K Verification	1 2 3 K Verification

P.O.W.E.R. SKILLS (PRINCIPLES OF WORK ENVIRONMENT READINESS)

000.0 COOPERATIVE WORK EXPERIENCE COMPETENCIES.

1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification
1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification	1 ☐ 2 ☐ 3 ☐ K ☐ Verification

VERIFICATION

The instructor should verify the level of mastery achieved by the student by initialing the competency box each time the student masters a competency. Later, if the student achieves a higher degree of mastery of a competency, the higher degree should be recorded and verified by the instructor.

INSTRUCTOR SHOULD SIGN FULL NAME AND SCHOOL NAME AND ADDRESS IN THE SPACE BELOW.

Verification	Signature
	Title
	School Name
	School Address

Verification	Signature
	Title
	School Name
	School Address

Verification	Signature
	Title
	School Name
	School Address

COOPERATIVE WORK EXPERIENCE

In addition to classroom training and laboratory performance identified on the Career MAP, this student has participated in cooperative work experience with employers as shown below:

Dates _____ Employer _____

Address of Employer _____

Supervisor _____

Supervisor Title _____

Dates _____ Employer _____

Address of Employer _____

Supervisor _____

Supervisor Title _____

Dates _____ Employer _____

Address of Employer _____

Supervisor _____

Supervisor Title _____

NOTES

This section of the MAP is provided so the instructor, employer, or student may list additional qualifying statements or other pertinent information. All comments should be initialed for verification.

State of Florida
Department of Education
Tallahassee, Florida
Betty Castor, Commissioner
Affirmative action/equal opportunity employer

IE577 BK-91